

Application No.: 10/612160
Amendment dated: August 2, 2004
Reply to Office action of May 4, 2004

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

LISTING OF CLAIMS:

1 (currently amended). A method of producing a bushing for a roller chain having a pair of end portions at opposite ends thereof and tapered internal circumferential surfaces at both said end portions, the method comprising the steps of:

press-forming a solid cylindrical blank of a required length to form a hollow cylindrical blank having required inner and outer diameters, and having end portions;

thereafter, by using a finishing die having an internal circumferential surface with a diameter the same as or slightly smaller than the outer diameter of said hollow cylindrical blank, and a pair of punches having small diameter cylindrical end portions which have the same diameters as the inner diameter of said hollow cylindrical blank, large diameter portions, which have diameters the same as the diameter of the internal circumferential surface of said die, and tapered portions provided between said large diameter portions and said small diameter end portions respectively, the small diameter cylindrical end portion of each punch projecting axially in a first direction from a narrow end of the tapered portion thereof, and the large diameter

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portion of each punch extending axially from a wide end of the tapered portion thereof in a direction opposite to said first direction, press-fitting said hollow cylindrical blank into the die with one punch of said pair of punches and, at the same time, press-fitting the small diameter cylindrical end portions and tapered portions of the pair of punches into both end portions of said hollow cylindrical blank while restraining both end surfaces of the press-fitted hollow cylindrical blank with cylindrical punch side members surrounding the large diameter portions of the punches and movable axially on the outsides of the punches;

whereby the outer circumferential surface of the cylindrical blank is finish-molded in the required diameter, and, at the same time, tapered surfaces are formed on inner circumferential surfaces of both end portions of the cylindrical blank.

2 (previously presented). A method of producing a bushing according to claim 1, in which, in a later step, an internal circumferential surface of said hollow cylindrical blank other than the tapered internal circumferential surfaces at both end portions thereof is subjected to sizing.